

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0000054305	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/000771	International filing date (day/month/year) 29.01.2004	Priority date (day/month/year) 27.02.2003
International Patent Classification (IPC) or national classification and IPC C12N9/10, C12N15/82, C12P7/64		
Applicant BASF PLANT SCIENCE GMBH et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of _____ sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/000771

Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-63 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-124 _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/12-12/12 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☒ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/000771

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	9-21	YES
	Claims	1-8, 22-24	NO
Inventive step (IS)	Claims		YES
	Claims	1-24	NO
Industrial applicability (IA)	Claims	1-24	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents; the same numbering will be used throughout the procedure and corresponds to the order of citation in the international search report:

D1: WO0159128 (BASF AG)

D2: Alonso and Maroto, 2000, Biotechnol.
Advan. 18:481 -497.

D3: WO02072742 (Bertholed et al.)

D3: Uniprot AC Q22267.

2. PCT Article 33(2) and (3) (novelty and inventive step)

- 2.1 Claim 1 relates to an isolated nucleic acid which codes for polypeptides with acyl-CoA:lysophospholipid-acyltransferase activity.

- 2.2 Document D4 discloses a protein sequence that is 99.645% or 100% identical to SEQ ID Nos.: 2, 4, 6 and 8 according to the present application. The corresponding nucleic acid sequence is therefore encompassed by the subject matter of claim 1.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

In consequence, the requirements of PCT Article 33(2) are not satisfied. This also applies in respect of dependent claims 2-8.

- 2.3 Claim 9 fails to meet the requirements of PCT Article 33(3). The transformation of plants or animals using known sequences cannot be considered inventive. At the time of filing, a person skilled in the art was aware of a wide variety of methods that, according to the circumstances, could have been chosen without inventive input. This also applies in respect of dependent claims 10 and 11.
- 2.4 Neither the prior art nor the description contain plausible information concerning a sequence with only 40% homology (sic) to the SEQ ID NOs: 2, 4, 6 or 8 which would solve the problem stated in claim 12, namely that of producing multiple unsaturated fatty acids. The very unclear functional restriction "equivalent Acyl-CoA:lysophospholipid-acyltransferase activity" (PCT Articles 5 and 6) fails to overcome this defect.
- 2.5 The IPEA starts from the assumption that only one sequence with a much greater degree of **identity** and a clear functional restriction could solve the problem of interest.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

- 2.6 Claim 12 fails to satisfy the requirements of PCT Article 33(3). This also applies in respect of dependent claims 13-21.
- 2.7 Claim 22 relates to oil, lipids or fatty acids produced by a method according to one of claims 12-21. Such a claim is admissible only if the product of the method, that is to say the oil, the lipids or the fatty acids, *per se* fulfils the conditions for patentability.
- 2.8 This does not appear to be the case, since documents D1 to D3 disclose oil, lipids or fatty acids which anticipate the subject matter of claim 22. Claim 22 fails to meet the requirements of PCT Article 33(2). This also applies in respect of dependent claims 23 and 24, which relate to corresponding compositions of oil, lipids or fatty acids and to the use thereof.

Supplemental Box Relating to Sequence Listing

Continuation of Box No. I, item 2:

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this report was established on the basis of:
- a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ in written format
 - ☒ in computer readable form
 - c. time of filing/furnishing
 - ☒ contained in the international application as filed
 - ☒ filed together with the international application in computer readable form
 - ☐ furnished subsequently to this Authority for the purposes of search and/or examination
 - ☐ received by this Authority as an amendment* on _____
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:
- The sequence listing in the description, pages 1-111 as originally filed.

* If item 4 in Box No. I applies, the listing and/or table(s) related thereto, which form part of the basis of the report, may be marked "superseded."